**Campylobacter jejuni**

Signs and Symptoms of the Disease:

* Severe abdominal cramps & diarrhea
* 8 loose bowel movements/day for the past 3 days
* recently noticed bloody stool
* Dinner of mixed greens & BBQ chicken about 30 hours prior to onset

Manner of exposure/route of infection

* Chicken, poultry, raw milk
* Most cases associated with improper food handling & poultry preparation
* Person-person spread is uncommon
* Virtually all human Campylobacter associated diarrheas are caused by C. jejuni
* Campylobacter coli & Campylobacter fetus causes a systemic infection such as bacteremia in neonates & young children. (C. fetus has a protein capsule-like structure that is R to complement)

Pathology:

* C. jejuni has a low infectious dose (cfu=500) which is easily in 1 drop of chicken juice
* Incubation period= 2-5 days
* It’s main virulence factor is it’s flagella
* Microaerophilic organisms colonize intestinal mucosal layer mediated by flagella & adhesins
* They invade/translocate across the epithelial surface to underlying tissue where Cytolethal distending toxin (Cdt) & an endotoxin contribute to tissue injury. (Some produce a LT cholera-like toxin that produces watery diarrhea in children & travelers)
* An acute, nonspecific neutrophilic & monocytic inflammatory rxn causing tissue damage in the lamina propria & jejunal epithelium is seen similar to Crohn’s & ulcerative colitis.

Methods of identification and placement into a particular biological subset:

* Motile/gram neg curved rods (comma or sea-gull shaped)
* Growth of Campylobacter requires selective media, microaerophilic conditions (5% Oxygen, 5-10% CO2) & incubation at 42F
* Differentiation of the Campylobacter species is based on biochemical rxns such as the nitrate reduction test.
* The outer membrane LPS of C. jejuni is the major antigen (there are 90 different O antigens for serotyping)

Epidemiology

* The most common bacterial cause of diarrheal illness in the US as well as worldwide!
* Extremely common in children under 2YO
* In the US incidence is 20 cases per 100,000
* Most cases are sporadic
* All age groups are at risk for acquiring infection, & infants/young people particularly likely to be infected

Differential diagnosis:

* Bacterial enteritis due to
  + Salmonella spp
  + Shigella sonnei
  + Campylobacter
  + Yersinia enterocolitica
* Crohn’s disease
* Enteric protozoal infection
* Hemorrhagic colitis (E coli O157:H7)
* Pseudomembranous colitis (C. diff)
* Ulcerative coitis (UC)

Prevention & Treatment

* Prevention:
* Raw poultry & meat should be prepared on separate countertops than other foods.
* Poultry should be cooked to internal temp of 180F or until the meat is no longer pink & juices run clear
* Hand washing

Treatment:

* Rehydration b/c it’s self limiting.
* Erythromycin may be administered is AB is required; quinolones can be used in elderly or in complicated bacteremic infections. If AB are indicated, make sure you give them early in the course.

Complications

* Guillan-Barre- flaccid paralysis as symmetrical ascending muscle weakness and facial diplegia for several weeks or longer due to infiltration of macrophages in peripheral nerves (To treat this you give mechanical respiration, plasma exchange to rid body of antibodies—Remember Ab are to very similar lipooligosaccharide, & lastly corticosteroids to suppress inflammation
* Reactive Arthritis- caused in MHC Class I serotype HLA-B27 patients